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EVALUATION OF A PROPOSED SUPPLEMENTAL DWARF MISTLETOE CONTROL PROJECT, FLATHEAD INDIAN RESERVATION, MONTANA

by

Oscar J. Dooling, Plant Pathologist
Environmental Services

SUMMARY

Many nonmerchantable trees on proposed control areas in the Flathead Reservation are moderately to heavily infested with dwarf mistletoe. Control by sanitation-thinning is desirable and is both biologically and economically sound.

INTRODUCTION

An evaluation of a supplemental dwarf mistletoe control project on the Flathead Indian Reservation was made July 25, 1973. This proposed project is in addition to both the current 5-year control project that began in fiscal year 1971 (1) and a supplemental project that was initiated in fiscal year 1973 (2). Oscar Dooling and John Moorhouse examined the two areas.

TECHNICAL INFORMATION

Causal agents.--Douglas-fir dwarf mistletoe, *Arceuthobium douglasii* Engelm., and western larch dwarf mistletoe, *A. laricis* (Piper) St. John.

Hosts.--Douglas-fir, *Pseudotsuga menziesii* (Mirb.) Franco; and western larch, *Larix occidentalis* Nutt. Lodgepole pine, *Pinus contorta* Dougl., is a secondary host of *A. laricis*.

Type of damage.--Reduction of tree vigor, height and diameter growth, and some mortality.

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EXPERIMENT STATION

Description of Areas

Deep Creek Project 1-75-1.--Five hundred acres of sapling to pole sized Douglas-fir and western larch, lightly to moderately infested with dwarf mistletoe, are proposed for treatment on this unit. Some of the area has an overstory which is infested by dwarf mistletoe and which is currently being removed by a commercial logging operation. Treatment will be sanitation-thinning of the residual stand after overstory removal.

Moss Peak Project 1-75-2.--This unit contains 500 acres of Douglas-fir and western larch which is heavily infested with dwarf mistletoe. The infested overstory trees are currently being removed in a commercial logging operation. Treatment will be sanitation-thinning of the residual stand after overstory removal.

DISCUSSION

Dwarf mistletoe causes the most serious disease on the Reservation. Growth loss in heavily infested stands exceeds 50 percent of the potential growth.

A 5-year program of dwarf mistletoe control was initiated in fiscal year 1971, and supplemental projects for fiscal years 1973 and 1974 were also approved. The Agency is making this supplemental request for $60,000 for fiscal year 1975 in order to intensify their effort to return infested stands to full productivity.

The Agency proposes to treat 500 acres on the Deep Creek unit and 500 acres on the Moss Peak unit. Cost is estimated at $60 per acre.

Many of the understory trees of both species have visible infections, especially in the Moss Peak unit. Latent infection is probably present in many more trees. Care should be used in selecting leave trees; nonsusceptible species should be selected wherever possible. An inspection should be scheduled within 3 to 5 years after initial treatment to check for latent infection; any infected trees found during the inspection should be treated, or the original investment in control may be lost.

COST-BENEFIT ANALYSIS

A cost-benefit analysis made in early 1972 is on file at the Flathead Indian Agency and shows a cost:benefit ratio of 1:2.4.

RECOMMENDATIONS

Decision for control.--Dwarf mistletoe control is recommended and is both biologically and economically sound.

Control method.--Logging of merchantable trees followed by sanitation-thinning of the residual stand by sawing is the method selected for these units.

REFERENCES

1. Dooling, O. J., 1969. Evaluation of proposed dwarf mistletoe control projects, Flathead Indian Reservation. USDA, Forest Service, Div. of State and Private Forestry, mimeographed report.

2. Dooling, O., S. Haglund, and R. Miller, 1972. Evaluation of proposed supplemental dwarf mistletoe control project, Flathead Indian Reservation. USDA, Forest Service, Div. of State and Private Forestry, report No. 72-5.